

## TO KNOW THE INCIDENCE OF TOPICAL CORTICOSTEROID MISUSE IN DIFFERENT DERMATOSES LIKE FUNGAL INFECTION, ACNE VULGARIS, MELASMA, PHOTOMELANOSIS, PEOPLE SEEKING SKIN BRIGHTENING CREAMS AND OTHER DERMATOSES

Shivkaran Jagrat<sup>1</sup>, B C Ghiya<sup>2</sup>, R D Mehta<sup>3</sup>

<sup>1</sup> Resident Doctor, <sup>2</sup> Associate Professor, <sup>3</sup> Senior Professor & HOD

Department of Dermatology, Venereology and Leprosy, S.P. Medical College and A.G. of Hospitals  
Bikaner, Rajasthan

Conflicts of Interest: Nil

### ABSTRACT:

**Background:** Incorrect practice of topical corticosteroids can cause to adverse-effects. Some of which side effects such as depigmentation being used in 'fairness' cream. Some patients may become reliant on the medication and use the drug unjudiciously by buying it directly from the chemists who are allowed to sell the medication openly without an authentic dermatologist's prescription.

**Methods:** A cross sectional epidemiological study will be conducted at the Department of Dermatology, Venereology and Leprosy, Sardar Patel Medical College, P.B.M. and associated group of hospitals, Bikaner to find out the incidence of topical steroid misuse in different dermatoses.

**Results:** A total of 109711 new patients were observed at dermatology OPD during the study period of one year, out of which Dermatophytosis patients presented with TCs misuse were 15165 (13.82%), Fairness patients presented with TCs misuse were 5264 (4.80%), Acne patients presented with TCs misuse were 2233 (2.04%), Dermatitis patients presented with TCs misuse were 1151 (1.05%), Infection and infestation (pyoderma, Scabies and pediculosis) patients presented with TCs misuse were 1047 (0.95%), Melasma patients presented with TCs misuse were 877 (0.80%) and others patients means all Dermatoses other than mention above presented with TCs misuse 3483 (3.17%).

**Conclusion:** The misuse of topical corticosteroids has a huge impact on dermatological practice as it is responsible for a significant proportion of visits to dermatology Hospital.

**Keywords:** Misuse, topical corticosteroids, dermatology

### Introduction

The advent of dermato-pharmacology was started by Sulzberger and Witten in 1952 when topical corticosteroid (TCs) were first entered for commercial use.<sup>1</sup> Due to dramatic results, these drugs got rapid popularity among doctors and patients also.

Incorrect practice of topical corticosteroids can cause to adverse-effects. Some of which side effects such as depigmentation being used in 'fairness' cream. Some patients may become reliant on the medication and use the drug unjudiciously by buying it directly from the chemists who are allowed to sell the medication openly without an authentic dermatologists

prescription. Early reports of topical corticosteroids dependence or addiction were published in 1973 by Burry<sup>2</sup> and in 1976 by Kligman and Frosch.<sup>3</sup> On the contrary, reports of serious topical and systemic adverse-effects of these medications appeared routinely in the literature as well as professional campaigns about their rational use have steadily spread worldwide<sup>4</sup>. Topical corticosteroid fear is especially seen among parents of atopic children and can lead to non adherence and failure in treatment.

### Materials and Method

A cross sectional epidemiological study will be conducted at the Department of Dermatology,

Venereology and Leprosy, Sardar Patel Medical College, P.B.M. and associated group of hospitals, Bikaner to find out the incidence of topical steroid misuse in different dermatoses like fungal infections, acne, melasma, photomelanosis and other dermatoses and to assessment of misuse of topical steroids will be done on the basis of clinical features like striae, acne, telangiectasia, hypopigmentation, steroid dependency, photosensitivity, atrophy, folliculitis, erythema, perioral dermatitis, rosacea, hirsutism and flare up of existing disease.

All general information including clinical diagnosis of new patients will recorded in outdoor register and we will assess in which type of dermatoses, steroid misuse side effects were observed. The study would be conducted for period of one year.

**Inclusion Criteria**

- 1) All new clinically diagnosed patients attending to outdoor.
- 2) All suspected new clinically diagnosed cases of topical steroid misuse in different dermatoses.

**Exclusion Criteria**

- 1) Patient not giving proper information.
- 2) Old cases, already registered with our outdoor register.
- 3) Systemic disease causing cutaneous side effects similiar to topical steroids e.g. endocrinopathies.
- 4) Systemic steroids causing cutaneous side effects
- 5) Patients with atypical clinical presentation.

**OBSERVATION**

**Table 1: Disease wise percentage of TCs misuse in various dermatoses out of total new patients (N= Total New Patients)**

MONTH	TOTAL NEW PATIENT (N)	DERMATOPHYTOSIS		FAIRNESS SEEKERS		ACNE VULGARIS		ACD		INFECTION +INFESTATION		MELASMA		others	
		TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)
August	10791	1667	15.45	455	4.22	135	1.25	103	0.95	96	0.89	73	0.68	410	3.80
September	10894	1817	16.68	542	4.98	184	1.69	103	0.95	109	1.00	85	0.78	327	3.00
October	9481	1293	13.64	495	5.22	247	2.61	150	1.58	109	1.15	102	1.08	425	4.48
November	8642	1293	14.96	429	4.96	215	2.49	83	0.96	73	0.84	78	0.90	261	3.02
December	7562	1257	16.62	325	4.30	189	2.50	60	0.79	61	0.81	30	0.40	261	3.45
January	9346	1453	15.55	527	5.64	180	1.93	74	0.79	88	0.94	52	0.56	271	2.90
February	8558	1233	14.41	414	4.84	195	2.28	81	0.95	83	0.97	61	0.71	276	3.23
March	8590	1045	12.17	435	5.06	203	2.36	100	1.16	158	1.84	83	0.97	214	2.49
April	8447	1042	12.34	406	4.81	197	2.33	132	1.56	88	1.04	86	1.02	220	2.60
May	8719	967	11.09	380	4.36	183	2.10	89	1.02	66	0.76	80	0.92	219	2.51
June	8598	1092	12.70	444	5.16	149	1.73	84	0.98	44	0.51	69	0.80	252	2.93
July	10083	1006	9.98	412	4.09	156	1.55	92	0.91	72	0.71	78	0.77	347	3.44
Total	109711	15165	13.82	5264	4.80	2233	2.04	1151	1.05	1047	0.95	877	0.80	3483	3.17

A total of 109711 new patients were observed at dermatology OPD during the study period of one year, out of which Dermatophytosis patients presented with TCs misuse were 15165 (13.82%), Fairness patients presented with TCs misuse were 5264 (4.80%), Acne patients presented with TCs misuse were 2233 (2.04%), Dermatitis patients presented with TCs misuse were 1151 (1.05%), Infection and infestation (pyoderma, Scabies and pediculosis) patients presented with TCs misuse were 1047 (0.95%), Melasma patients presented with TCs misuse were 877 (0.80%) and others patients means all Dermatoses other than mention above presented with TCs misuse 3483 (3.17%).

**Table 2: Diseases wise percentage of TCs misuse in various dermatoses out of total TCs misuse patients (n= Total New Patients with TCs misuse)**

MONTH	NO. OF TOTAL NEW PATIENTS WITH S.M (n)	DERMATOPHYTOSIS		FAIRNESS SEEKERS		ACNE VULGARIS		ACD		INFECTION +INFESTATION		MELASMA		others	
		TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)	TCs Misuse	Percentage (%)
August	2939	1667	56.72	455	15.48	135	4.59	103	3.50	96	3.27	73	2.48	410	13.95
September	3167	1817	57.37	542	17.11	184	5.81	103	3.25	109	3.44	85	2.68	327	10.33
October	2821	1293	45.83	495	17.55	247	8.76	150	5.32	109	3.86	102	3.62	425	15.07
November	2432	1293	53.17	429	17.64	215	8.84	83	3.41	73	3.00	78	3.21	261	10.73
December	2183	1257	57.58	325	14.89	189	8.66	60	2.75	61	2.79	30	1.37	261	11.96
January	2645	1453	54.93	527	19.92	180	6.81	74	2.80	88	3.33	52	1.97	271	10.25
February	2343	1233	52.62	414	17.67	195	8.32	81	3.46	83	3.54	61	2.60	276	11.78
March	2238	1045	46.69	435	19.44	203	9.07	100	4.47	158	7.06	83	3.71	214	9.56
April	2171	1042	48.00	406	18.70	197	9.07	132	6.08	88	4.05	86	3.96	220	10.13
May	1984	967	48.74	380	19.15	183	9.22	89	4.49	66	3.33	80	4.03	219	11.04
June	2134	1092	51.17	444	20.81	149	6.98	84	3.94	44	2.06	69	3.23	252	11.81
July	2163	1006	46.51	412	19.05	156	7.21	92	4.25	72	3.33	78	3.61	347	16.04
Total	29220	15165	51.90	5264	18.02	2233	7.64	1151	3.94	1047	3.58	877	3.00	3483	11.92

A total of 29220 patients presented with TCs misuse were observed at dermatology OPD during the study period of one year, out of which Dermatophytosis patients presented with TCs misuse were 15165 (51.90%), Fairness patients presented with TCs misuse were 5264 (18.02%), Acne patients presented with TCs misuse were 2233 (7.64), ACD patients presented with TCs misuse were 1151 (3.94%), infection and infestation (pyoderma, Scabies and pediculosis) patients presented with TCs misuse were 1047 (3.58) melasma patients presented with TCs misuse were 877 (3.00%) and other patients like all dermatoses other than mention above presented with TCs misuse were 3483 (11.92%)

**Table 3: Percentage of patients presented with TCs misuse in various dermatoses.**

Month	FAIRNESS SEEKERS			DERMATOPHYTOSIS			MELASMA			ACNE VULGARIS			INFECTION +INFESTATION			ACD			others		
	NEW PATIENT	TCs Misuse	Percentage (%)	NEW PATIENT	TCs Misuse	Percentage (%)	NEW PATIENT	TCs Misuse	Percentage (%)	NEW PATIENT	TCs Misuse	Percentage (%)	NEW PATIENT	TCs Misuse	Percentage (%)	NEW PATIENT	TCs Misuse	Percentage (%)	NEW PATIENT	TCs Misuse	Percentage (%)
August	603	455	75.46	2862	1667	58.25	270	73	27.04	506	135	26.68	602	96	15.95	1083	103	9.51	4865	410	8.43
September	664	542	81.63	2955	1817	61.49	242	85	35.12	674	184	27.30	657	109	16.59	879	103	11.72	4823	327	6.78
October	657	495	75.34	2131	1293	60.68	330	102	30.91	851	247	29.02	461	109	23.64	999	150	15.02	4052	425	10.49
November	556	429	77.16	2152	1293	60.08	191	78	40.84	756	215	28.44	359	73	20.33	648	83	12.81	3980	261	6.56
December	418	325	77.75	1979	1257	63.52	112	30	26.79	714	189	26.47	347	61	17.58	539	60	11.13	3453	261	7.56
January	625	527	84.32	2315	1453	62.76	152	52	34.21	675	180	26.67	493	88	17.85	545	74	13.58	4541	271	5.97
February	519	414	79.77	2024	1233	60.92	193	61	31.61	695	195	28.06	454	83	18.28	582	81	13.92	4091	276	6.75
March	557	435	78.10	1676	1045	62.35	264	83	31.44	775	203	26.19	562	158	28.11	782	100	12.79	3974	214	5.39
April	509	406	79.76	1668	1042	62.47	219	86	39.27	737	197	26.73	565	88	15.58	993	132	13.29	3756	220	5.86
May	465	380	81.72	1689	967	57.25	278	80	28.78	730	183	25.07	411	66	16.06	1157	89	7.69	3989	219	5.49
June	526	444	84.41	1810	1092	60.33	283	69	24.38	644	149	23.14	273	44	16.12	1010	84	8.32	4052	252	6.22
July	490	412	84.08	1808	1006	55.64	375	78	20.80	718	156	21.73	533	72	13.51	1147	92	8.02	5012	347	6.92
Total	6589	5264	79.89	25069	15165	60.49	2909	877	30.15	8475	2233	26.35	5717	1047	18.31	10364	1151	11.11	50588	3483	6.89

During the study period of one year, A total of 25069 New patients of Tinea was observed at dermatology OPD out of which, Dermatophytosis patients presented with TCs misuse were 15165 (60.49%). A total number of fairness patients observed were 6589 out of which fairness patients presented with TCs misuse were 5264 (79.89%). A total number of melasma patients observed were 2909, out of which TCs misuse patients were 877 (30.15%). A total of 8475 Acne patients observed, out of which TCs misuse patients were 2233 (26.35). A total of 5717 infection and infestation (pyoderma, Scabies and pediculosis), out of which TCs misuse patients were 1047 (18.31%), A total of 10364 ACD patients were observed, out of which TCs misuse were 1151 (11.11%). A total of 50588 other patients were observed out of which TCs misuse were 3483 (6.89%)

## DISCUSSION

Acne Vulgaris patients presented with TCs misuse were 2233 (7.64%), which may be compared with other studies carried out by Hameed et al<sup>80</sup> (8%), AJ-Dhalimi et al<sup>5</sup> (16.4%), Dey et al<sup>6</sup> (17.94%), Jha et al<sup>7</sup> (20.4%), Saraswat et al<sup>8</sup> (24%), Meena et al<sup>9</sup> (25.68%).

Melasma patients presented with TCs misuse were 877 (3.00%), The comparison reveals with other studies carried out by Meena et al<sup>9</sup> (11.62%), Saraswat et al<sup>8</sup> (17%), Jha et al<sup>7</sup> (21.2%), Dey et al<sup>6</sup> (25.85%), and Hameed et al<sup>10</sup> (36%).

Infections and infestations patients presented with TCs misuse were 1047 (3.58%) which compared with other studies carried out by Meena et al<sup>9</sup> (0.27%), Al – Dhalime et al<sup>5</sup> (7.8%) and Dey et al<sup>6</sup> (8.96%).

Allergic contact dermatitis patients presented with TCs misuse were 1151 (3.94%) the comparison reveals with other studies carried out by TS Nagesh et al<sup>11</sup> (0.98%), Meena et al<sup>9</sup> (1.62) and AJ-Dhalimi et al<sup>5</sup> (9.30%)

Patients seeking fair skin presented with TCs misuse were 5264 (18.02%) which compared with other studies carried out by Meena et al<sup>9</sup> (8.38%), Saraswat et al<sup>8</sup> (29%) Jha et al<sup>7</sup>(35.6), Hameed et al<sup>10</sup> (46%), Dey et al<sup>6</sup> (50.39%) and AJ-Dhalimi et al<sup>5</sup> (65.7%).

## CONCLUSION

Our study showed that the most common TCs misuse was found in Dermatophytosis followed by use as fairness seeking patients

## BIBLIOGRAPHY

1. Sulzberger MB, Witten VH. The effect of topically applied compound F in selected dermatoses. *J Invest Dermatol* 1952;19:101-2.
2. Burry JN. Topical drug addiction: Adverse effects of fluorinated corticosteroid creams and ointments. *Med J Aust* 1973;1:393-6.
3. Kligman AM, Frosch PJ. Steroid addiction. *Int J Dermatol* 1979;18:23-31.
4. Charman CR, Morris AD, Williams HC. Topical corticosteroid phobia in patients with atopic eczema. *Br J Dermatol* 2000;142:931-6.
5. M.A. AJ-Dhalimi. N. Aljrahny. Misuse of topical corticosteroids. A clinical Study in m Iraqi hospital ; *Eastern Mediterranean Health Journal* 2006. 12:847-52.
6. Dey V. Miuse of toical corticosteroids: A clinical study of adverse effects *Indian Dermatolgy Online Journal* 2014: 436-40.
7. Jha AK, Sinha R, Prasad S, et al., Misuse of topical corticosteriods on the face A cross sectional study among dermatology outpatients. *Indian Dermatol Online J* 2016; 7: 259-63.
8. Saraswat A, Lahiri K, Chatterjee M, Barua S, Coondoo A, Mittal A, et al., Topical corticosteroid abuse on the face: A prospective metacentric study of dermatology outpatients. *Indian J*

- Dermatol Venereol leprol 2011; 77:160-6.
9. Meena S, gupta LK., Khare AK, Balai M, Mittal A, Mehta S et al., Topical corticosteroids abuse: A clinical study of cutaneous adverse effects Indian J Dermatol 2017; 62: 675.
  10. Hameed A F. Topical steroid misuse on the face : A medical And social problem in Iraq. Iraqi Postgraduate Medical Journal 2014; 13: 346-9.
  11. Nagesh TS, Akhilesh A, Topical steroid awareness and abuse: A prospective study among dermatology outpatients. Indian J dermatol 2016; 61: 618-21.